

Message Text

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ACTION EB-08

INFO OCT-01 ISO-00 EUR-12 DODE-00 NSAE-00 USIA-06 TRSE-00
ERDA-05 CIAE-00 COME-00 /032 W
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R 151844Z MAR 77
FM USMISSION OECD PARIS
TO SECSTATE WASH DC 5724

C O N F I D E N T I A L SECTION 01 OF 02 OECD PARIS 07603

EXCON

E.O. 11652: XGDS1
TAGS: ESTC COCOM
SUBJ: ITALIAN MOS IC TECHNOLOGY TO ROMANIA IL 1355

REF: A. COCOM DOC (77) 140, B. COCOM DOC (77) 140.3

1. REF DOC B REPORTS ITALIAN DELEGATION EXPERT'S
STATEMENT IN SUPPORT OF REFCASE. STATEMENT BEING
POUCHED PRACHT, WALINSKY AND SCHROEDER MARCH 18 (ONE
WEEKLY POUCH). AS CASE WAS SUBMITTED UNDER URGENCY
PROCEDURE US DEL PROVIDES CONDENSED VERSION OF STATEMENT
BELOW. REFCASE RESCHEDULED FOR COCOM MEETING 3/22.

2. THE DELEGATION EXPLAINED THAT THE TRANSACTION IN
QUESTION INVOLVED THE TRANSFER OF THE KNOW-HOW OF TWO
SEMI-CONDUCTOR PROCESSES FOR THE PRODUCTION OF P-CHANNEL
AND N-CHANNEL MOS INTEGRATED CIRCUITS. THE P-CHANNEL
TECHNOLOGY WOULD BE USED TO MANUFACTURE:

- M 130 1024 BIT DYNAMIC SHIFT REGISTER
- M 136 DUAL 512 BIT DYNAMIC SHIFT REGISTER
- M 141 QUAD 256 BIT DYNAMIC SHIFT REGISTER
- M 240 4096 BIT STATIC READ ONLY MEMORY (ROM)
- M 380/1/2/3 8 BIT MICROPROCESSOR

THE N-CHANNEL TECHNOLOGY WOULD BE USED TO MANUFACTURE
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M 330 1024 BIT STATIC RANDOM ACCESS MEMORY (RAM).

3. THE P-CHANNEL TECHNOLOGY WAS ALREADY CONSIDERED OBSO-
LETE BY AMERICAN MANUFACTURERS OF MOS SEMI-CONDUCTORS
AND WAS NO LONGER USED IN NEW COMPONENT DEVELOPMENT
BECAUSE OF ITS POOR TECHNICAL PERFORMANCE FOR SUPPLY
VOLTAGE (VERY HIGH: 17 V) AND VERY LOW SPEED (1500 NANO-

SECOND ACCESS TIME).

THE N-CHANNEL PROCESS PROPOSED FOR TRANSFER TO ROMANIA COVERED ONLY THE FIRST GENERATION. MORE MODERN TECHNOLOGY USING ION IMPLANTATION PROCESS WOULD DEFINITELY NOT BE SUPPLIED. DIFFERENCE BETWEEN TWO PROCESSES LAY MAINLY IN SPEED PARAMETER. SPEED OF FIRST GENERATION WAS ABOUT 600 NANoseconds, WHILE THAT OF ION IMPLANTATION PROCESS WAS 40 NANoseconds, WITH A RATIO OF 1 TO 15. SEVERAL YEARS WOULD BE NEEDED TO PASS FROM FIRST GENERATION TO ION IMPLANTATION PROCESS. OLD PROCESS DID NOT ALLOW DEVELOPMENT OF COMPLEX DEVICES. THE OPERATING TEMPERATURES OF P AND N-CHANNEL PROCESSES WERE IN THE RANGE OF 0 TO # 70 DEGREES C. AND THUS DEVICES LIMITED TO CONSUMER AND INDUSTRIAL FIELDS.

4. THE LICENCE AGREEMENT ALSO COVERED SUPPLY OF PRODUCTION EQUIPMENT FOR 1.7 MILLION PIECES PER YEAR. TOTAL WORKING FORCE IN THE RUMANIAN FACTORY WOULD BE 275 PEOPLE. PRODUCTION SHOULD START 18-24 MONTHS AFTER INSTALLATION BEGAN. MAIN APPLICATIONS OF IC WOULD BE IN DESK CALCULATORS, BILLING MACHINES AND PRIVATE TELEPHONE SWITCHBOARDS. BROCHURES PRESENTED BY THE DELEGATION SHOWED THAT EASTERN

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C O N F I D E N T I A L SECTION 02 OF 02 OECD PARIS 07603

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COUNTRIES WERE ALREADY PRODUCING THIS KIND OF ELECTRONIC EQUIPMENT. RUMANIAN INDUSTRY WAS ALREADY PRODUCING FOLLOWING TYPE OF DESK CALCULATORS AND MEDIUM COMPUTERS UNDER WEST EUROPEAN LICENSES; UNDER LICENCE FROM A NETHERLANDS FIRM THEY PRODUCED:

TYPES FC 15, FC 15 P, FC 15 TZ BOOK-KEEPING AND
INVOICING MACHINES AND TYPES FELIX CE 30, FELIX CE 32
DESK CALCULATORS; UNDER LICENCE FROM A
FRENCH FIRM THEY PRODUCED A MEDIUM COMPUTER TYPE IRIS 50
SIMILAR TO THE IBM 340.

5. THE EASTERN COUNTRIES ALREADY HAD MOS TECHNOLOGY AND
AN INTEGRATED CIRCUIT FAMILY CALLED "TTL" WHICH WAS
SUITABLE FOR THE REALIZATION OF ELECTRONIC EQUIPMENT
EVEN MORE SOPHISTICATED THAN THOSE PRODUCED WITH MOS
TECHNOLOGY MAINLY FOR TWO REASONS: (1) OPERATING TEMPERA-
TURE WAS -55 TO +125 DEGREE C. AND (2) VERY HIGH SPEED
OF 6 NANOSECONDS. WITH TTL TECHNOLOGY IT WAS ALSO
POSSIBLE TO CARRY OUT VERY COMPLEX FUNCTIONS, INCLUDING
STATIC AND DYNAMIC RANDOM ACCESS MEMORIES (RAM) WITH A
CAPACITY OF 4 KBIT E.G. THE TYPE FAIRCHILD 93470 AND
93481. THIS FAMILY WAS PRODUCED IN RUSSIA, POLAND,
BULGARIA, AND RUMANIA (SEE DATA BOOKS TABLED BY THE
ITALIAN DELEGATION). MOREOVER, THE M338 MICROPROCESSOR
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WAS AT LEAST SIX YEARS OLD AND CONSIDERED OBSOLETE BY
ANY WESTERN STANDARDS. THUS, THE TECHNOLOGY PROPOSED
FOR EXPORT WAS OUT-OF-DATE AND, FURTHERMORE, IT WOULD BE
TWO YEARS BEFORE THE RUMANIAN FIRM STARTED PRODUCTION.

6. ACTION REQUESTED: US VIEWS ASAP.
TURNER

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